

1 This listing of claims will replace all prior versions, and listings, of claims  
2 in the application:

3  
4 **Listing of Claims**

5 Claim 1 (**Previously Presented**): One or more computer-readable media  
6 comprising a flash memory driver that is executable by a computer to interface  
7 between a file system and one or more flash memory media, the flash memory  
8 driver comprising:

9 flash abstraction logic that is invocable by the file system to manage  
10 flash memory operations without regard to the type of the one or more flash  
11 memory media; and

12 flash media logic configured to interact with different types of the  
13 flash memory media;

14 wherein the flash abstraction logic invokes the flash media logic to  
15 perform memory operations that are potentially performed in different ways  
16 depending on the type of the flash memory media.

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18 Claim 2 (**Original**): The flash memory driver as recited in Claim 1,  
19 wherein one of the flash memory operations includes performing wear-leveling  
20 operations associated with the flash memory medium.

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22 Claim 3 (**Original**): The flash memory driver as recited in Claim 1,  
23 wherein one of the flash memory operations includes maintaining data integrity of  
24 the flash memory medium.  
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1           Claim 4 (**Original**): The flash memory driver as recited in Claim 1,  
2 wherein one of the flash memory operations includes handling recovery of data  
3 associated with the flash memory medium after a power-failure.

4  
5           Claim 5 (**Original**): The flash memory driver as recited in Claim 1,  
6 wherein one of the flash memory operations includes mapping status information  
7 associated with physical sectors of the flash memory medium for use by the file  
8 system.

9  
10          Claim 6 (**Previously Presented**): The flash memory driver as recited in  
11 Claim 1, wherein the flash medium logic is further configured to translate  
12 commands received from the file system to physical sector commands for issuance  
13 to the flash memory media.

14  
15          Claim 7 (**Previously Presented**): The flash memory driver as recited in  
16 Claim 1, wherein the flash medium logic is user programmable to read, write and  
17 erase data to and from the flash memory media.

18  
19          Claim 8 (**Previously Presented**): The flash memory driver as recited in  
20 Claim 1, wherein the flash media logic is configured to perform error code  
21 correction associated with the flash memory media.

22  
23          Claim 9 (**Original**): A flash driver, comprising:  
24               flash abstraction logic, interposed between a file system and a flash  
25 memory medium, configured to:

1 (a) map a logical sector status from the file system to a physical  
2 sector status of the flash memory medium; and

3 (b) maintain memory requirements associated with operating the  
4 flash memory medium.

5  
6 Claim 10 (**Original**): The flash driver as recited in Claim 9, further  
7 comprising a user programmable flash medium logic, configured to read, write and  
8 erase data to and from the flash memory medium.

9  
10 Claim 11 (**Original**): The flash driver as recited in Claim 9, further  
11 comprising a user programmable flash medium logic configured to receive and  
12 translate specific operational commands from the file system associated with  
13 reading and writing data to the flash memory medium.

14  
15 Claim 12 (**Original**): The flash driver as recited in Claim 9, wherein the  
16 memory requirements include managing wear-leveling operations associated with  
17 the flash memory medium.

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19 Claim 13 (**Original**): The flash driver as recited in Claim 9, wherein the  
20 memory requirements include maintaining data integrity of the flash memory  
21 medium.

22  
23 Claim 14 (**Original**): The flash driver as recited in Claim 9, wherein the  
24 memory requirements include handling recovery of data associated with flash  
25 memory medium after a power-failure.

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2       Claim 15 (**Original**): The flash driver as recited in Claim 9, further  
3 comprising a flash medium logic, programmably configurable by a user to perform  
4 error code correction associated with the flash memory medium.

5  
6       Claim 16 (**Original**): A flash driver, comprising:  
7           user programmable flash medium logic, configured to read, write  
8 and erase data to and from a flash memory medium; and  
9           flash abstraction logic, interposed between a file system and flash  
10 memory medium to maintain universal requirements for the operation of the flash  
11 memory medium.

12  
13       Claim 17 (**Original**): The flash driver as recited in Claim 16, wherein the  
14 flash abstraction logic passes specific commands associated with certain types of  
15 flash memory media directly to the flash medium logic for translation and  
16 execution.

17  
18       Claim 18 (**Original**): The flash driver as recited in Claim 16, wherein the  
19 flash abstraction logic is an interface between the flash medium logic and the file  
20 system.

21  
22       Claim 19 (**Original**): The flash driver as recited in Claim 16, wherein the  
23 universal requirements include maintaining data integrity of the flash memory  
24 medium.

1           Claim 20 (**Original**): The flash driver as recited in Claim 16, wherein the  
2 universal requirements include managing wear-leveling operations associated with  
3 the flash memory medium.

4  
5           Claim 21 (**Original**): The flash driver as recited in Claim 16, wherein the  
6 universal requirements include handling recovery after a power-failure.

7  
8           Claim 22 (**Original**): The flash driver as recited in Claim 16, wherein the  
9 flash medium logic comprises a set of programmable entry points that can be  
10 implemented by a user to interface with the type of flash memory medium selected.

11  
12          Claim 23 (**Original**): A processing device that uses a flash memory  
13 medium for storage of data, comprising:

14               a file system, configured to control data storage for the processing  
15 device;

16               flash media logic, configured to perform physical sector operations  
17 to a flash memory medium based on physical sector commands, wherein the flash  
18 medium logic comprises a set of programmable entry points that can be  
19 implemented by a user to interface with the type of flash memory medium  
20 selected; and

21               flash abstraction logic, configured to maintain flash memory  
22 requirements that are necessary to operate the flash memory medium.

23  
24          Claim 24 (**Original**): The processing device as recited in Claim 23,  
25 wherein the flash abstraction logic passes physical logic commands associated

1 with certain types of flash memory medium directly to the flash memory medium  
2 logic for translation and execution.

3  
4 Claim 25 (**Original**): The processing device as recited in Claim 23,  
5 wherein the flash abstraction logic is an interface between the flash medium logic  
6 and the file system.

7  
8 Claim 26 (**Original**): The processing device as recited in Claim 23,  
9 wherein the flash memory requirements include maintaining data integrity of the  
10 flash memory medium.

11  
12 Claim 27 (**Original**): The processing device as recited in Claim 23,  
13 wherein the flash memory requirements include managing wear-leveling  
14 operations associated with the flash memory medium.

15  
16 Claim 28 (**Original**): The processing device as recited in Claim 23,  
17 wherein the flash memory requirements include handling recovery after a power-  
18 failure.

19  
20 Claim 29 (**Original**): The processing device as recited in Claim 23,  
21 wherein the requirements are common to a plurality of different flash memory  
22 media.

23  
24 Claim 30 (**Original**): The processing device as recited in Claim 23,  
25 wherein the flash medium logic comprises a set of programmable entry points that

1 can be implemented by a user to perform error code correction with the type of  
2 flash memory medium used in the processing device.

3  
4 Claim 31 (**Original**): The processing device as recited in Claim 23,  
5 whereby the flash medium logic relieves the flash abstraction logic from  
6 performing translation of the physical sector commands received from the file  
7 system.

8  
9 Claim 32 (**Original**): The processing device as recited in Claim 23,  
10 wherein the physical sector operations include read, write and error code  
11 correction commands associated with the flash memory medium.

12  
13 Claim 33 (**Original**): In a processing device that uses a flash memory  
14 medium for storage of data, a method for driving the flash memory medium,  
15 comprising:

16 managing rules associated with operating the flash memory medium  
17 in a flash abstraction logic; and

18 issuing physical sector commands directly to the flash memory  
19 medium from a flash medium logic.

20  
21 Claim 34 (**Original**): The method as recited in Claim 33, wherein one of  
22 the rules includes maintaining data integrity of the flash memory medium.



1           Claim 35 (**Original**): The method as recited in Claim 33, wherein one of  
2 the rules includes managing wear-leveling operations associated with the flash  
3 memory medium.

4  
5           Claim 36 (**Original**): The method as recited in Claim 33, wherein one of  
6 the rules includes handling recovery of the media after a power-failure.

7  
8           Claim 37 (**Original**): The method as recited in Claim 33, wherein issuing  
9 physical sector commands directly to the flash memory medium comprises  
10 receiving read and write commands from a file system and translating them into  
11 the physical sector commands.

12  
13           Claim 38 (**Original**): The method as recited in Claim 33, further  
14 comprising issuing a set of programmable entry points that can be implemented by  
15 a user to perform error code correction with the type of flash memory medium  
16 used in the processing device.

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18           Claim 39 (**Original**): The method as recited in Claim 33, further  
19 comprising issuing a set of programmable entry points that can be optionally  
20 selected by a user to interface with the type of flash memory medium used in the  
21 processing device.

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23           Claim 40 (**Original**): The method as recited in Claim 33, further  
24 comprising receiving read and write commands from a file system.  
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1           Claim 41 (**Original**): One or more computer-readable media comprising  
2 computer-executable instructions that, when executed, perform the method as  
3 recited in claim 33.

4  
5           Claim 42 (**Original**): A computer-readable medium for a flash driver,  
6 comprising computer-executable instructions that, when executed, direct the flash  
7 driver to provide an interface between a file system, selected from one of a  
8 plurality of different file systems, and a flash memory medium, selected from one  
9 of a plurality of different flash memory media.

10  
11          Claim 43 (**Original**): A computer-readable medium for a flash driver,  
12 comprising computer-executable instructions that, when executed, direct the flash  
13 driver to:

14                 provide an interface between a file system, selected from one of a  
15 plurality of different files systems, and a flash memory medium, selected from one  
16 of a plurality of different flash memory media; and

17                 manage a set of characteristics that are common to the plurality of  
18 different flash memory media at a flash abstraction logic.

19  
20          Claim 44 (**Original**): A computer-readable medium for a flash driver,  
21 comprising computer-executable instructions that, when executed, direct the flash  
22 driver to:

23                 provide an interface between a file system, selected from one of a  
24 plurality of different files systems, and a flash memory medium, selected from one  
25 of a plurality of different flash memory media;

1                   manage a set of characteristics that are common to the plurality of  
2 different flash memory media at a flash abstraction logic; and  
3                   provide programmable entry points that can be optionally selected by  
4 a user to interface with the type of flash memory medium selected.  
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